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ABSTRACT

This paper summarizes recent experience of large-scale, nationally representative longitudinal youth transition studies in the United States. Two study series are considered. First is the longitudinal youth cohorts of the U.S. Department of Labor's Bureau of Labor Statistics, the National Longitudinal Youth Study, with cohorts that started in 1979 and 1997. The second series is made up of the student cohorts from the National Center for Education Statistics (NCES). The NCES series is comprised of: (1) the National Longitudinal Study of the High School Class of 1972; (2) the High School and Beyond Study; (3) the National Education Longitudinal Study of 1988; and (4) the Education Longitudinal Study of 2002. The first section of this paper supplies an overview of the two sets of studies. The second section compares the studies, pointing out commonalities and differences in approaches to design and method. The third section summarizes the content of the research instruments used in the studies. The fourth and final section discusses some of the research applications of these databases. The first appendix points to further sources of information about the design, content, and findings of the studies, and the second appendix contains more detailed information about the instruments described in the third section. (Contains 5 figures and 14 references.) (SLD)

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LONGITUDINAL STUDIES OF YOUTH: RECENT AMERICAN EXPERIENCE

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LONGITUDINAL STUDIES OF YOUTH: RECENT AMERICAN EXPERIENCE

This paper summarizes recent experience of large-scale, nationally-representative longitudinal youth transition studies in the United States. Two study series are considered. First, the longitudinal youth cohorts of the U.S. Department of Labor's Bureau of Labor Statistics (BLS): the National Longitudinal Study, with youth cohorts that started in 1979 (NLSY79) and 1997 (NLSY97). Second, the student cohorts sponsored by the U.S. Department of Education's National Center for Education Statistics (NCES). The NCES study series comprises the following: the National Longitudinal Study of the High School Class of 1972 (NLS-72), High School and Beyond (HS&B), the National Education Longitudinal Study of 1988 (NELS:88), and the Education Longitudinal Study of 2002 (ELS:2002).

The paper is divided into four sections. The first section supplies an overview of the U.S. Department of Labor and Department of Education studies. The second section compares the studies, looking to commonalities and differences in their approach to issues of design and method. The third section summarizes the content of the research instruments used in the studies. The fourth and final section talks about some of the research applications of these databases. In addition, there are two appendices. The first appendix points to further sources of information about the design, content, and findings of these studies. The second appendix contains more detailed information about the content of the instruments described in section 3.

1. U.S. Department of Labor and U.S. Department of Education Youth Cohort Studies

1.1 Department of Labor: the BLS NLSY79 and NLSY97 Youth Cohorts

The Bureau of Labor Statistics currently conducts the National Longitudinal Survey (NLS) Program, including two youth cohort studies: the National Longitudinal Survey of Youth, 1979 cohort (NLSY79), and National Longitudinal Survey of Youth,1997 cohort (NLSY97). The design and purposes of each are described below.

1.1.1 NLSY79 is a nationally representative sample of 12,686 young men and women who were 14-22 years old when they were first surveyed in 1979. These individuals were interviewed annually through 1994 and are now interviewed on a biennial basis. Since their first interview, many of the respondents have made both the transitions from school to work, and from their parent's home to becoming parents and homeowners. Data collected yearly chronicle these changes and provide researchers an opportunity to study in great detail the experiences of a large group of young adults who can be considered representative of all American men and women born in the late 1950s and early 1960s.

A key feature of this survey is that it gathers information in an event history format, in which dates are collected for the beginning and ending of important life events. Labor force activity is detailed in this manner. Information includes the start and stop dates for each job held since the last interview, periods in which individuals are not working but still with an employer (called within-job gaps), and labor market activities (looking for work, out of the labor force) during gaps between jobs. Because individuals' work histories are collected in this manner, measures of actual labor market experience, tenure with a specific employer, and employer

mobility are easily calculated. Additional information collected in the event-history format includes marital status, fertility, and participation in government assistance programs such as unemployment insurance and Aid to Families with Dependent Children (AFDC).

Although a primary focus of the NLSY79 is labor force behavior, the actual content of the NLSY79 is considerably broader. The NLSY79 contains an expansive set of questions ranging from child-care costs to welfare receipt. For example the survey includes detailed question on educational attainment, training investments, income and assets, health conditions, workplace injuries, insurance coverage, alcohol and substance abuse, sexual activity, and marital and fertility histories. Additional labor force information includes hours worked, earnings, occupation, industry, benefits, and other specific job characteristics. Moreover, greatly enhancing the data, the NLSY79 includes an aptitude measure administered to the youth, a school survey, and high school transcript information. An aptitude indicator, the full Armed Services Vocational Aptitude Battery (ASVAB) was administered to 94 percent of the sample respondents in 1980. The ASVB consists of a series of 10 tests measuring knowledge and skill in areas such as mathematics and language. In 1980, a survey of the secondary schools attended by NLSY79 respondents was conducted. Information gathered in the survey included school-level characteristics as well as respondent-specific information such as achievement test scores. In 1980-1983, the NLSY79 collected detailed transcript information for potential high school graduates that included coursework, grades, and attendance records

1.1.2 NLSY97 consists of a nationally representative sample of approximately 9,000 youths who were 12 to 16 years old as of December 31, 1996. Round 1 of the survey took place in 1997. In that round, both the eligible youth and one of that youth's parents received hour-long personal interviews. In addition, during the screening process, an extensive two-part uestionnaire was administered that listed and gathered demographic information on members of the youth's household and on his or her immediate family members living elsewhere. Youths will be interviewed on an annual basis. Data from rounds 1 - 3 of the NLSY97 were released in May 2001. The event history file and confidential geocode data file were released in September 2001.

The NLSY97 is designed to document the transition from school to work and into adulthood. It collects extensive information about youths' labor market behavior and educational experiences over time. Employment information focuses on two types of jobs, "employee" jobs where youths work for a particular employer, and "freelance" jobs such as lawn mowing and babysitting. These distinctions will enable researchers to study effects of very early employment among youths. Employment data include start and stop dates of jobs, occupation, industry, hours, earnings, job search, and benefits. Measures of work experience, tenure with an employer, and employer transitions can also be obtained. Educational data include youths' schooling history, performance on standardized tests, course of study, the timing and types of degrees, and a detailed account of progression through post-secondary schooling.

Aside from educational and labor market experiences, the NLSY97 contains detailed information on many other topics. Subject areas in the questionnaire include: Youths' relationships with parents, contact with absent parents, marital and fertility histories, dating, sexual activity, onset of puberty, training, participation in government assistance programs, expectations, time use, criminal behavior, and alcohol and drug use. Areas of the survey that are

potentially sensitive, such as sexual activity and criminal behavior, comprise the self-administered portion of the interview.

One unique aspect of the NLSY97 is that Round 1 contains a parent questionnaire that generates information about the youths' family background and history. Information in the parent questionnaire includes: parents' marital and employment histories, relationship with spouse or partner, ethnic and religious background, health (parents and child), household income and assets, participation in government assistance programs, youths' early child-care arrangements, custody arrangement for youth, and parent expectations about the youth.

Additional efforts provide information that will greatly enhance the research uses of the NLSY97. In 1997-1998, NLSY97 respondents were given the computer-adaptive version of the Armed Services Vocational Aptitude Battery (CAT-ASVAB). The CAT-ASVAB comprises 10 tests that measure knowledge and skill in a number of areas including mathematics and language.

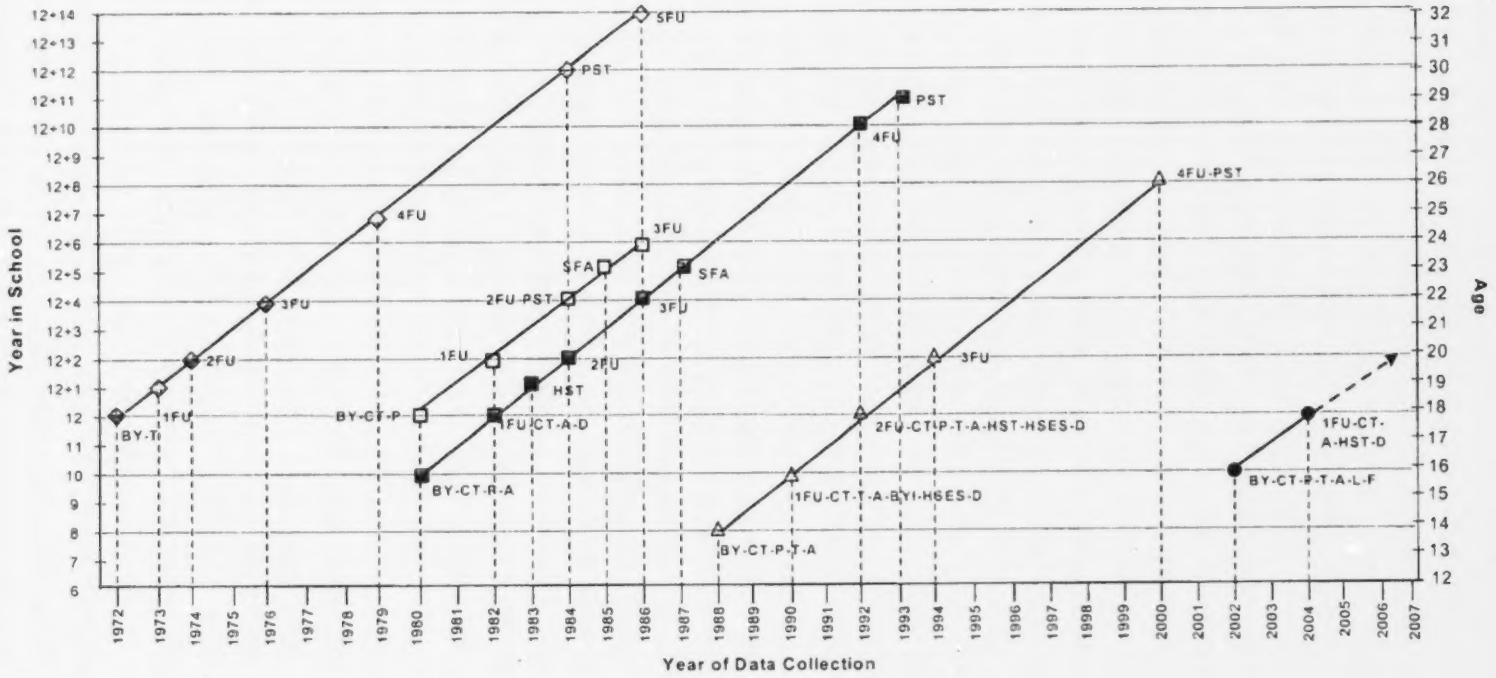
In winter 1999-2000, high school transcripts were obtained for NLSY97 respondents who were no longer enrolled in high school and for whom field interviewers had secured parent and respondent consent for transcript release. Respondents eligible for transcript data collection had either graduated from high school or were age 18 or older and no longer enrolled in high school. In 1996 and again in 2000, surveys were conducted of all schools with a 12th grade in the statistical sampling areas in which NLSY97 respondents reside. The surveys gathered information about the characteristics of each school, the staff, and the student body.

1.2 Department of Education: the NCES Youth Cohorts

In response to its mandate to "collect and disseminate statistics and other data related to education in the United States" and the need for policy-relevant, nationally representative longitudinal samples of elementary and secondary students, the U.S. Department of Education's National Center for Education Statistics (NCES) instituted the National Education Longitudinal Studies program. The aim of this continuing program is to study the educational, vocational, and personal development of students at various stages in their educational careers, and the personal, familial, social, institutional, and cultural factors that may affect that development.

The high school longitudinal studies program consists of three completed studies: The National Longitudinal Study of the High School Class of 1972 (NLS-72), High School and Beyond (HS&B), and the National Education Longitudinal Study of 1988 (NELS:88). In addition, data collection for the Educational Longitudinal Study of 2002, the fourth longitudinal study in this time series, is currently in progress. Taken together, these studies describe (or will describe) the educational experiences of students from four decades—the 1970s, 1980s, 1990s, and 2000s—and not only describe and measure educational attainment but also provide bases for further understanding the correlates of educational success in the United States. Figure 1.2 includes a temporal presentation of these four longitudinal education studies, and highlights their component and comparison points. Figure 1.2 does not identify all future follow-up points for ELS:2002; final decisions have yet to be made concerning them. However, the general expectation is that ELS:2002 sophomores will be followed for at least 10 years.

Figure 1.2.--Longitudinal design for the NCES high school cohorts



NLS-72=National Longitudinal Study of the High School Class of 1972
HS&B=High School and Beyond: 1980
NELS:88=National Education Longitudinal Study of 1988
ELS:2002=Education Longitudinal Study of 2002

BY=Base Year data collection
1FU=1st follow-up data collection
2FU=2nd follow-up data collection
3FU=3rd follow-up data collection
4FU=4th follow-up data collection
5FU=5th follow-up data collection

CT=Cognitive test
P=Parent survey
T=Teacher survey
A=Administrator survey
L=Library/media center survey
F=Facilities checklist

HST=High School Transcript
PST=Post-Secondary Transcript
SFA=Student Financial Aid
BYI=Base Year Ineligible Study
HSES=HS Effectiveness Study
D=Dropout Survey

In addition to the secondary school cohorts, NCES sponsors longitudinal studies of both younger and older students. The Early Childhood Longitudinal Study (ECLS) consists of both a birth cohort, and a kindergarten cohort. The National Postsecondary Student Aid Study (NPSAS) surveys students in higher education. Two longitudinal studies of postsecondary students follow selected NPSAS students: the Beginning Postsecondary Longitudinal Study (BPS), and a study of recent graduates, Baccalaureate and Beyond (B&B).

1.2.1 National Longitudinal Study of the High School Class of 1972 (NLS-72)

The National Education Longitudinal Studies program began 30 years ago, with the implementation of the National Longitudinal Study of the High School Class 1972 (NLS-72). NLS-72 was designed to provide longitudinal data for educational policymakers and researchers that linked educational experiences in high school with important downstream outcomes such as labor market experiences and postsecondary education enrollment and attainment. With a national probability sample of 19,001 high school seniors from 1,061 public and religious and other private schools, the NLS-72 sample was representative of approximately three million high school seniors enrolled in 17,000 U.S. high schools during the spring of the 1971-72 school year. Each member of this cohort was asked to complete a student questionnaire and a cognitive test battery. In addition, administrators at the sample members' schools were asked to supply information about the schools' programs, resources, and grading systems, as well as survey data on each student. No parent survey was conducted. However, postsecondary education transcripts were collected from the institutions attended by students. Five follow-up surveys were completed with this student cohort, with the final data collection taking place in 1986, when the sample members were 14 years removed from high school and approximately 32 years old.

A wide variety of data were collected in the NLS-72 surveys. For example, in addition to background information about the student and his or her family, the base-year and follow-up surveys collected data on each respondent's educational activities (e.g., schools attended, grades received, degree of satisfaction with education institutions). Participants were also asked about their work experiences, periods of unemployment, job satisfaction, military service, marital status, and children. Attitudinal information on self-concept, goals, and community involvement, and personal evaluations of educational activities were also included in the study.

1.2.2 High School and Beyond (HS&B)

Eight years after the start of NLS-72, the second in the series of NCES longitudinal studies was launched. High School and Beyond (HS&B) included one cohort of high school seniors comparable to the NLS-72 sample; however, the study also extended the age span and analytical range of NCES' longitudinal studies by surveying a sample of high school sophomores. Base-year data collection took place in the spring of the 1979-80 academic year with a two-stage probability sample. More than 1,000

schools served as the first-stage units, and 58,000 students within these schools were the second-stage units. In addition, data were collected from teachers, principals, and parents to better understand the school and home contexts for the sample members. Both cohorts of HS&B participants were resurveyed in 1982, 1984, and 1986; the sophomore group also responded in 1992. As in NLS-72, secondary and postsecondary transcripts were collected for the HS&B cohorts.

With the study design expanded to include a sophomore cohort, HS&B provided critical data on the relationships between early high school experiences and students' subsequent educational experiences in high school. For the first time, national data were available showing students' academic growth over time and how family, community, school, and classroom factors promoted or inhibited student learning. Researchers were able to use data from the extensive battery of cognitive tests within the longitudinal study to assess growth in tested achievement over time. Moreover, data were then available to analyze the school experiences of students who later dropped out of high school. These data became a rich resource for policymakers and researchers over the next decade and provided an empirical base to inform the debates of the educational reform movement that began in the early 1980s.

1.2.3 National Education Longitudinal Study of 1988 (NELS:88)

Much as NLS-72 captured a high school cohort of the 1970s and HS&B high school cohorts of the 1980s, NELS:88 was designed to study high school students of the 1990s—but with a premeasure of their achievement and status, prior to their entry into high school. Data collection for the National Education Longitudinal Study of 1988 was initiated with the 8th grade class of 1988. At that time, NELS:88 was the most ambitious longitudinal study undertaken by NCES. It further extended the age and grade span of NCES longitudinal studies by collecting data from a middle school/junior high school cohort. Along with the student survey, NELS:88 included surveys of parents, teachers, and school administrators. By beginning with the 8th grade, NELS:88 was able to capture the population of early dropouts—those who left school prior to spring term of 10th grade—as well as later dropouts (who left after spring of 10th grade) as had been studied in HS&B. The study was designed not only to follow a cohort of students over time (as had the predecessor studies), but also to "freshen" the sample at each of the first two follow-ups, and thus to follow multiple grade-defined cohorts over time. Thus, 10th grade and 12th grade cohorts were included in NELS:88 in the first follow-up (1990) and the second follow-up (1992), respectively. The freshening of the sample not only provided comparability to earlier cohorts from NLS-72 and HS&B, but it enabled researchers to conduct both grade representative cross-sectional and subsequent longitudinal analyses with the data. In late 1992 and early1993, high school transcripts were collected for sample members, and, in the fall of 2000 and early 2001, postsecondary transcripts were collected, further increasing the analytic potential of the data. Consequently, NELS:88 represents an integrated system of data that tracked students from middle school (at age 13-14) through secondary and postsecondary education, labor market experiences, and marriage and family formation (at age 25-26).

1.2.4 Education Longitudinal Study of 2002 (ELS:2002)

ELS:2002 will follow a tenth-grade cohort. Base year data collection has just (June, 2002) been completed. The transition through high school and beyond into postsecondary institutions and the labor market is both complex (there are many different pathways that youth may follow) and prolonged (it takes place over a period of years) – the complexity and timeframe for this transition make longitudinal approaches especially appropriate. By surveying the same young people over time, it is possible to record the changes taking place in their lives. It is also possible to explain these changes, that is, to understand the ways that earlier achievements, aspirations and experience predict and influence what happens to them later. In the first year of data collection (the 2002 base year) ELS:2002 will measure students' tested achievement in reading and in mathematics. ELS:2002 will also obtain information from students about their attitudes and experiences. These same students will be tested and surveyed again, in a follow-up to take place in two years time, to measure changes such as achievement gains in mathematics, as well as to investigate changes in enrollment status (such as the situation of students who drop out of school as contrasted to those who persist in their education). Cohort members will be followed for a number of years (probably about 10) thereafter so that later outcomes (such as their access to and persistence in higher education, or their success in the labor market) can be understood in terms of their earlier aspirations, achievement and high school situation.

ELS:2002 will gather information at multiple levels. It will obtain information not just from students and their school records, but also from students' parents, their teachers, and the administrators (principal and library media center director) of their schools. This multilevel focus will supply researchers with a comprehensive picture of the home, community and school environments and their influences on the student.

Using this multilevel and longitudinal information, the base year (2002) and first follow-up (2004) of ELS:2002 will help researchers and policy makers to explore and better understand such issues as the importance of home background and parental aspirations for their child's success; the influence of different curriculum paths and special programs; the effectiveness of different high schools, and whether their effectiveness varies with their size, organization, climate or ethos, curriculum, academic press, or other characteristics. These data will facilitate understanding of the impact of various instructional methods and curriculum content and exposure in bringing about educational growth and achievement

After the high school years, ELS:2002 will continue to follow its sample of students into postsecondary education or the labor market. For students who continue on to higher education, ELS:2002 will measure the effects of their high school careers on subsequent access to postsecondary institutions, their choices of institutions and programs, and as time goes on, their postsecondary persistence, attainment, and eventual entry into the labor force and adult roles. For students who go directly into the work force (whether as dropouts or high school graduates), ELS:2002 will be able to determine

how well high schools have prepared these students for the labor market and how they fare within it.

2. Meeting the Challenges of Longitudinal Research: A Comparison of the Design and Methods of the BLS and NCES Studies.

The two study series illustrate a number of design and methodological choices that panel studies of youth must face. Both the similarities and differences of approach between these studies may be instructive. (For purposes of simplifying the comparison, the NCES studies will be represented by but one of the series, NELS:88.) Some important differences include the following:

NLSY	NELS:88
Age cohort	Grade cohort
Single cohort, range of ages	Freshened cohorts, specific grades
Annual data collection	Biennial data collection
Household sample	School Sample
Baseline ability measure	Achievement measures at multiple time points

On the other hand, there are also some important similarities of approach:

Use of repeated cohorts to achieve time series for trend analyses
Use of contextual data sources (including exploitation of geocode linkages)
Use of administrative records (for example, high school and postsecondary transcripts)
Oversampling of rare policy-relevant subgroups
Panel maintenance (locating mobile respondents, achieving high response rates); minimization of panel attrition and the need for imputation of missing data
Exploitation of computer technology in data collection and dissemination

Many of these comparisons are deserving of further comment.

2.1 Differences of cohort definition

The NLSY surveys rely on age cohorts; the NCES surveys on grade cohorts. The National Longitudinal Survey of Youth 1997 (NLSY97) is a survey of young men and women born in the years 1980-84; respondents were ages 12-17 when first interviewed in 1997. In the National Longitudinal Survey of Youth 1979 (NLSY79), subjects were born in the years 1957-64; respondents were ages 14-22 when first interviewed in 1979. In NELS:88, the base year began with spring-term 1988 eighth graders (who typically were about 13 years old). Of course, although not the basis for sampling, the NLSY studies also collect grade information on respondents; likewise, NELS:88 collects date of birth. Each, therefore, to some degree, can be analyzed in the other's terms.

A potential limitation of grade-based longitudinal studies is that they typically fail to represent later grades as the sample progresses through school. For example, while

the eighth-grade students in NELS:88 were mostly tenth-graders two years later (1990), not all stayed within the modal grade progression of the cohort. A few skipped a grade, many others repeated a grade, some dropped out of school (perhaps to come back at a later time). Moreover, not all 1990 tenth graders were eighth graders in 1988 (or eighth graders within the sampling frame, limited to the United States). Some may have had no chance of selection because they were out of the country two years before, or hospitalized or institutionalized. Others might have been repeating tenth grade, having been ninth graders two years before. In order to ensure that the NELS:88 eighth grade sample could be used for cross-sectional estimates at tenth and twelfth grades (and for intercohort comparisons with tenth and twelfth graders), the sample was freshened in 1990 with sophomores who had not been in the 1988 sample frame, and with seniors in 1992. Freshening was implemented through linking of students listed on twelfth grade rosters, based on a half-open interval procedure.[1] Thus, the NELS:88 sample permits generalizations about three cohorts -- 1988 eighth graders, 1990 tenth graders, and 1992 twelfth graders -- each forming its own panel, and whose future outcomes can be explored with data from the later NELS:88 rounds.

The BLS has begun new cohorts approximately every 20 years; NCES prefers to follow its cohorts a shorter period of time, but has begun a new study every decade. In the future, it might be of benefit for NCES to launch a middle grades cohort. This would eliminate a current gap in coverage between the birth and kindergarten cohorts of the Early Childhood Longitudinal Study, on the one hand, and the secondary school cohorts (such as NELS:88 and ELS:2002) on the other. An overlapping "spliced" or "synthetic" cohorts design could potentially support analysis from birth into the post-secondary school years as if there were but a single cohort (thus making information available much sooner, while minimizing problems of panel attrition that are attendant upon long-term follow-up). Ideally, such cohorts should overlap in grade, and be as close as possible in geography and time -- in order to minimize compositional differences between cohorts, as well as period effects -- analytically merging the NCES longitudinal studies into a single cohort is an exciting possibility that should be seriously considered. For BLS, instead of mounting a new cohort only every two decades, it might be of benefit to add a younger subcohort in order to have a rolling (cumulated) panel. A rolling panel (as is used in some other U.S. longitudinal studies, such as the PSID) would continually refresh itself and could drop older cohorts as they moved out of the labor force.

2.2 Periodicity of data collection.

Although there is some variation in the later rounds, the NLSY surveys tend to be annual and the NCES surveys to occur only every two years. (In addition to surveying its subjects more often, NLSY surveys them for many more years.) The biennial interviews of NELS:88 provide, more or less, a "snapshot in time." However, NLSY provides a more continuous record. Continuous-time stochastic models (such as "hazard" or "event history" analysis) require complete information so that changes in states can be considered in relation to their precise time. Retrospective accumulation of event histories

[1] "Freshening" is fully explained in Ingels et al., pp.45-46, NCES 94-632; this publication can be downloaded from the electronic catalogue on the NCES website, http://nces.ed.gov/pubsearch.

is viable in a panel design only insofar as the recall period and the character and salience of the events assort to the degree needed to provide accurate data. Given the detailed event history information collected in NLSY, annual interviews are most appropriate. The two-year gap between interviews poses some problems for NELS:88 (for example, without teacher data on instructional practices and goals for intermediate points in time such as ninth and eleventh grades, linking classroom data to achievement gain becomes more problematic). However, the use of administrative records, such as the course taking histories that appear in academic transcripts, helps to fill in many of the information gaps between data collections.

2.3 Use of contextual data.

In order to understand the major transitions experienced by adolescents, the contribution of both home and family must be understood. Although the NLSY surveys are grounded in a household sample, and interviews typically take place face-to-face in the home, the study has also recognized the importance of gathering educational information, including reports from school principals and teachers, and school archival records, such as academic transcripts covering the high school years. Schooling choices and influences, and related investments in skill acquisition, are recognized as being critical to labor-market analyses of youth cohorts. Understanding the interconnection of decisions regarding schooling, employment, marriage and fertility is a major objective of the NLSY. Likewise, although the NCES studies such as NELS:88 are initially conducted in schools (and include teacher and school administrator surveys as well as surveys of students), recognition of the importance of home influences and of parental involvement in schooling led to making parent surveys a part of NELS:88 as well. A parent survey in 1988 gathered basic home background information, including information that could not be obtained from students (for example, information about family income and parental attitudes and behaviors). In addition, in order to facilitate a wider ecological understanding of sample members' situations, school-district level and community-level data have been mapped in from external data sources. (For example, 1990 U.S. decennial Census data about community characteristics have been mapped to NELS:88 students residential addresses over the years, as well as to the addresses of their schools.) Linkage to such external data sources is appealing not just in terms of its enrichment of the data, but also because it involves primarily computer programming time, and can be achieved with no real burden to the respondents and at a low cost.

2.4. Measures of ability and tested achievement

The capacity to control for ability or achievement level is vital to the proper analytic specification of many if not most postsecondary and work outcomes analyses. In recognition of this fact, both the BLS and NCES surveys do include test scores. Both the NLSY79 and NLSY97 were used as the renorming samples for the Armed Services Vocational Aptitude Battery (ASVAB). In addition, NLSY97 obtained PIAT math scores in the baseline survey. In NELS:88, a battery of four achievement tests (in mathematics, science, social studies and reading) was given in the spring term of eighth, tenth, and twelfth grade. (Of course, existing test scores, such as the PSAT, SAT, ACT,

and so on, were also collected in archival records components of the studies, along with courses taken, grades, class rank, and so on.)

Despite the recognition by both studies of the benefits of test data, the NELS:88 approach puts much more emphasis on test equating -- vertical equating, so that gains in proficiency can be measured over time in each subject, and equating to other tests. While both studies stress both educational and home inputs into adolescent development, the school-based sample design of NELS:88 facilitates the study of school effects. A major emphasis of NELS:88 is therefore measuring achievement gain over time, and relating gains to specific school (as well as home) processes. In addition to producing test scores on a vertical scale that registers gain, NELS:88 is designed so that there are crosswalks to other major assessment programs. Equating puts the NELS:88 twelfth-grade math results on the same numerical and criterion-referenced proficiency scales as the National Assessment of Educational Progress (NAEP). NELS:88 mathematics results were also put on the same scale as its predecessor study, HS&B, thus facilitating intercohort comparisons. For the successor study to NELS:88, ELS:2002, test equating will be done between the ELS:2002 tenth grade mathematics and reading tests and the PISA math and reading tests of fifteen year olds, as well as earlier studies in the NCES series, and NAEP.

2.5 New Cohorts for Trend Analysis

Over the years, both BLS and NCES have launched new cohorts. From the point of view of the instrumentation, the challenge of doing so is to address new issues (new policy questions and concerns, new influences) while at the same time preserving a stable core of items that will allow for time series comparisons. The NLSY97 will soon reach a point at which significant cross-cohort comparisons can be made to the NLSY79. Within the NCES studies, tenth graders in secondary school can be compared at three points in time (1980, 1990, 2002), as can twelfth graders at five points in time (1972, 1980/82, 1992, 2004), and students two years out of high school at five time points as well (1974, 1982/84, 1994, 2006). In the past, intercohort comparisons have been particularly valuable in measuring the impact of school reform in the United States (for example, through comparison of the HS&B cohort, which predated most reform efforts and whose declining performance was a major stimulus to reform, to the NELS:88 cohorts, which were influenced by a number of important school reform initiatives). While any time series data, including repeated cross-sectional studies, can help to plot the direction of change, longitudinal studies such as HS&B and NELS:88 can also assist in the understanding of the deeper processes and relationships that underlie and explain it.

2.6 Exploiting Benefits of Computer Technology

While in their early origins both the BLS and NCES studies used paper-and-pencil methods (and the NCES studies continue to employ pencil and paper data capture methods such as optical scanning, in the early years of in-school test and questionnaire administration), major advantages have accrued from increasing use of computer-assisted data collection technology. The out-of-school rounds of NELS:88 employed Computer-

Assisted Telephone Interviewing (CATI) as the primary mode of data collection. Both the NLSY79 and NLSY97 are currently conducted in person by an interviewer with a laptop computer into which has been loaded a Computer-Assisted Personal Interviewing (CAPI) survey module. However, sensitive questions are self-administered, through an audio-assisted capability (ACASI) housed in the laptop. Computerized data collection formats such as CATI and CAPI are of enormous value in longitudinal studies, because prior round information can be preloaded. This provides the opportunity to provide the respondent with memory-stimulating prompts, or to disambiguate seeming contradictions. Of course, CATI and CAPI also minimize skip pattern error by automating the interview, and permit more complex branching questions to be asked. They make the interview more conversational by helping it to flow within a logical context. And, CATI/CAPI provides for immediate inter-item consistency checks and range checks, as well as for error resolution.

Another respect in which computer technology has transformed both studies in recent years is through improvements in getting survey information to researchers in a form they readily can use. The data sets are disseminated in the form of electronic codebooks (ECBs) on CD-ROMs. While an ECB is primarily an electronic version of a fully documented survey codebook, it is also more. With the ECB, the data user can analyze the survey data using a personal computer. The user has a number of important options. Users can electronically browse through a list of all variables. Using key words or variable names/labels, users can electronically search for variables that are relevant to their research questions. The ECB provides an electronic display of the full question text of each variable in the database, along with notes and other information. The ECB displays the SAS code that was used to create constructed or derived variables. The ECB includes electronic display of the distribution of counts and percentages for each variable in the database. Also, the ECB permits users to select or "tag" variables of interest. Users can subsequently print a hardcopy codebook that displays the distributions of the gagged variables. They may in addition generate SAS-PC or SPSS-for-Windows program code for the tagged variables and generate a "tag" file that will save the set of tags for import into another application. While sophisticated ECBs have enlarged the user community for the studies, other electronic applications have also proved useful. For example, on-line bibliographies are maintained for both NELS:88 and the NLSY data sets. Such bibliographies help users to formulate their research questions, and to build on and extend (rather than unknowingly duplicate) prior research. Electronic bibliographies also help study designers to determine which variables have proved most useful, and to understand the variety and magnitude of use of the data in the different contexts of government policy offices, academic research, and in fulfilling the requirements of doctoral dissertations.

2.7 Vigorous dedication to initial high response rates and panel maintenance

Both studies series collect a significant body of locating information so that respondents can be found in the follow-up waves. Both invest heavily in finding, and securing the cooperation of, sample members. Response rates in excess of 90 percent have generally been obtained (although in recent years, response rates for the NLSY79

have dropped to the high 80s, and the final [2000] round of NELS:88 also registered a decline in participation rates.) Nonresponse is adjusted for in the weighting scheme. However, given high levels of unit and item response, procedures such as imputation of missing data have generally not been employed. In addition, both the BLS and NCES studies have set aside funds for methodological research, in order to both assess data quality, and to find ways to effect improvements in data quality. Methodological work has included research on cognitive processes and respondent motivation, reliability reinterviews, analysis of convergence of responses across different sources (comparison of student and parent responses, comparison of teacher and student responses, comparison of responses across rounds), and so on.

3. Instrumentation

This section provides an overview of the content of the NLSY79, NLS97, and NELS:88 research instruments. A deeper account of questionnaire content may be found in Appendix B. In addition, for those desiring yet more detail, Appendix A explains how to access the questionnaires themselves.

3.1 NLSY79 Instrumentation: questionnaire content areas

Figure 3.1 below summarizes the topical areas for the data elements in the NLSY 79. It should be remembered that in the base year, it was necessary to gather important static characteristics (sex, family background) that, unlike the more dynamic variables, need not be asked each round. Also, of course, certain questions will be more appropriate to younger respondents than to the same respondents as they age. In the main, however, the NLSY79 questionnaires are best characterized as a series of repeated measures. In particular, the repeated content is contained in a series of event histories, including event histories of residence, schooling, employment, program participation, marriages, and pregnancies.

Figure 3.1. Data elements in the NLSY79

1	Work and nonwork experiences
2	Training investments
3	Schooling, school records, and aptitude information
4	Military experience
5	Income and assets
6	Health conditions, injuries, and insurance coverage
7	Alcohol and substance use, criminal behavior
8	Attitudes and aspirations
9	Geographic residence information
10	Family background and demographic characteristics
11	Household composition
12	Marital and fertility histories
13	Child care

3.2 NLSY97 Instrumentation: questionnaire content areas

The early rounds content of the NLSY97 differs somewhat from that of its predecessor in that its age cohort starts earlier (in NLSY97 the youngest base year respondents are age 12, as contrasted to 14 in the NLSY79). In addition, the NLSY97 included a parent survey so that retrospective information about the child's situation and development could be collected, and so that more extensive information about family background could be obtained. The content areas listed below are explored in detail in Appendix B.

Figure 3.2. Data elements in the NLSY97

1	Employment
2	Schooling
3	Training
4	Income, assets, and program participation
5	Family formation
6	Family background
7	Expectations
8	Attitudes, behaviors, and time use
9	Health
10	Environmental variables
11	Event history variables

3.3 NELS:88 Instrumentation: questionnaire content areas

Figure 3.3 depicts the round-by-round sources of information gathered in NELS:88. A brief summary of main content areas in the various questionnaires follows.

Figure 3.3.—Data sources for the National Education Longitudinal Study of 1988, by year and data collection wave: 1988-2000

Data Collection (Year)	Data Source					
	Students/ Dropouts[1]	Parents	School Administrators	Teachers	Achievement Tests	Transcripts[2]
Base Year	X	X	X	X	X	
First Follow-up	X		X	X	X	
Second Follow-up	X	X	X	X	X	X
Third Follow-up	X					
Fourth Follow-up	X					X

[1] Following the base-year data collection in 1988, all NELS:88 follow-up studies included school dropouts.

[2] Data collection in 1992 included high school transcripts; postsecondary transcripts were collected in 2000.

3.3.1 Student reports

3.3.1.1 *Achievement test data at grade 8, and 2 and 4 years later*: assessments in reading, mathematics, science and social studies.

3.3.1.2 *Student questionnaire data*: school experiences and attitudes, educational aspirations, motivation for taking various subjects, time spent on homework each week, time spent reading for pleasure, time spent watching television, time spent playing video games, participation in school sports, extracurricular activities, life values, locus of control, self-esteem, occupational aspirations at age 30, planning for the transition to the workforce or higher education, friendships and peer relationships, use of tobacco and other substances, religiosity, whether currently employed, relationship with parents and siblings.

In the postsecondary rounds (1994, 2000) the focus of the questionnaire changed to the following topics: employment, job-related training, high school completion, postsecondary education, adult education, family formation, income and expenses, other outcomes such as civic participation, and leisure activity.

3.3.1.3 *School records* (academic transcripts):
Secondary school courses taken, sequence, grades received, test scores (PSAT, SAT, ACT, AP), absences, special program recipience, class rank. Postsecondary school transcripts also collect information about coursework and grades.

3.3.2 Contextual data (student as unit of analysis)

3.3.2.1 *Parent component*:
Social background, household composition, parental occupations, parental education, race/ethnicity, immigrant or native-born, mother tongue, religious background, child's early educational history (grades repeated, changed schools, etc.), contacts with the school, involvement with the school, monitoring of homework, knowledge of child's friends and their parents, neighborhood characteristics, opinions about child's school, aspirations for the child, family income, savings for college

3.3.2.2 *Teacher component*:
Teacher background and training, teacher attitudes, classrom characteristics and resources, general goals and expectations for the class, instructional activities, View of school climate, individual student evaluations

3.3.2.3 *School component*
School, teacher and student body characteristics; school leadership, school policies, special programs and services, curriculum and instruction, school principal background and attitudes

3.3.2.4 *Linkages to other data sources*
Student's residential neighborhood characteristics from Census data
School's neighborhood characteristics from Census data
Links to school district data, geographical identifiers (state, county)

4. Uses of the NLSY and NELS:88 Data

The U.S. Department of Labor and Department of Education study series have contributed both to applied or educational policy research, and to basic educational research. Both have been used within the periodic statistical reporting system of the relevant government agencies, and have been drawn upon to produce specific tabulations in support of new legislation or the re-authorization of existing programs. In addition, data from these sources have also been used by many dozens of independent researchers in universities and policy centers to conduct sustained analyses of processes and outcomes. For both NLSY79 and NELS:88 there are bibliographies with several

hundred entries – books, government reports, journal articles, conference papers and doctoral-dissertations.

Pergamit (1991) gives six examples of ways that the U.S. government has used the NLSY79 data:

1. Minimum wage legislation.
2. Wage paths of young people: use of longitudinal data to answer questions about income distribution of school completers and leavers, males and females.
3. Transition from school to work: averages and durations of employment and unemployment by graduation status, race and sex; effects of unemployment insurance benefits on the unemployment of youth.
4. Work and the family: understanding the behavior of women in coordinating work and family life and how policy changes (legislation dealing with parental leave, child care, and related subjects) can influence that behavior.
5. Training: using longitudinal data to estimate the effect of private sector training on wages, who receives different kinds of training, and how these different types of training affect wages and earnings.
6. Effects of military experience: use of longitudinal data to investigate whether military service offers "a leg up" to low-aptitude youth in seeking to overcome their cognitive and skill deficits and compete successfully in the civilian world.

For purposes of illustration, the first of these examples can be expanded upon, in which Pergamit considers policies for minimum wages. In the 1980s, there was interest both in increasing the minimum wage, and in creating a special subminimum wage for youth, to make young people more attractive to business and permit them to acquire job skills that would permit them to advance in the labor market. NLSY79 data were analyzed at the request of those preparing minimum wage legislation. The data were used in two different ways. First, to ascertain whether minimum wage jobs do indeed provide a means of entry into an advance through the labor market – or whether, instead, they are basically a dead end. Second, to evaluate the likely impact of a subminimum or "training wage" for youth.

In both these cases, fundamental questions could best be answered with longitudinal data. Cross-sectional surveys could inform American legislators and policy makers of how many people were employed at a minimum wage, but only a longitudinal data set such as the NLSY79 could answer the question of whether people get out of minimum wage jobs, and if so, how long this may take. In the case of the training wage, there was an initial inclination to apply this option only to workers with less than a specified amount of cumulative work experience. The impact of this was measured through the NLSY79, and this provision dropped on the basis of the results. While one could construct work histories retrospectively in a cross-sectional survey, the longitudinal event histories collected by a study such as the NLSY79 provides a much more accurate means to ascertain total lifetime work experience.

While government policy offices do make extensive use of data from the BLS and NCES longitudinal studies of youth, most of the bibliographic entries for the studies cite the use of the data by academic researchers. Academic research using the NLSY has addressed such topics as measuring peer group teenage behavior, schooling choices and demographic cycles, teenage childbearing and socioeconomic disadvantage, the relationship between drug use and wages, maternal employment and child behavioral outcomes, the relationship between dropping out of school and delinquent behavior, the demand for abortion by unmarried teenagers, gender differences in wage growth and job mobility, the relationship between private-sector training and the earnings of young workers, and family social capital and children's behavior problems. While the NLSY97 data are too recent to have generated a large research literature, some early publications already have occurred (see Horrigan and Walker 2001), and cross-cohort comparisons to NLSY79 are now being made (for example, Reynolds and Pemberton 2001; Rothstein 2001;Walker 2001). In the volume recently edited by Michael (2001), essays address such questions as the relationship between parental regulation and adolescent discretionary time use decisions, the effect of family structure on youth outcomes, adolescent expectations and well-being, and differences between rural and urban youth, both in respect of labor market ties and deviance.

For NELS:88, analyses have been conducted at the cross-sectional, cross-cohort (with comparison to NLS-72 and HS&B), and longitudinal level. Most of the NELS:88 research literature deals with issues of youth in secondary school settings, though more and more of the future research will address postsecondary issues, especially with the recent release of the questionnaire and postsecondary transcript data from the data collection in 2000.[2]

Issues that were addressed with data from the early rounds include the following:

- Students' academic growth
- The process of dropping out of high school
- The role of family background and the home education support system in fostering students' educational success
- The features of effective schools
- The impact of course taking choices on success in the high school years (and thereafter)
- The equitable distribution of educational opportunities as registered in the distinctive school experiences and performance of students from

[2] For a review of the research potential of the NELS:88 1988-2000 data, see Appendix B of Ingels, Curtin, Kauffman, Alt and Chen, 2002, *Coming of Age in the 1990s: The Eighth Grade Class of 1988 12 Years Later* (NCES 2002-321).

various groups: students in public and in private high schools; language minority students; students with disabilities; students in urban settings, suburban and rural; students from upper, middle, and lower socioeconomic status levels; and male and female high school students

- Steps taken to facilitate the transition from high school to postsecondary education or the world of work

New issues that can be addressed with the later data (1994, 2000) include the following:

- The later educational and labor market activities of high school dropouts
- The transition of those who do not go directly on to postsecondary education to the world of work
- Access to and choice of undergraduate and graduate educational institutions
- Persistence in attaining postsecondary educational goals
- Progress through the postsecondary curriculum
- Rates of degree attainment
- Barriers to persistence and attainment
- Rate of return on education to both the individual and society
- Other adult roles, such as family formation and civic participation

Recent articles using NELS:88 data address such topics as whether there is an optimal size for secondary schools, whether student uniforms have an effect on attendance and achievement, the academic achievement of rural school students compared to their suburban and urban peers, the impact of vocational education programs on the transition to work, the effects of working part-time in high school on the transition to the labor force, parent and teacher influences on attitudes toward science, characteristics of students who are at risk of school failure, the effects of coursetaking on achievement, parents' transmission of educational goals to their adolescent children, access to postsecondary education, family and school influences on nonmarital school-age motherhood, influences on occupational aspirations, the effects of ability grouping on achievement in math, trends among high school seniors between 1972 and 1992 (stability and change in basic values, coursetaking, rates of participation in extracurricular activities, hours of homework, reading for pleasure, and so on), and the college attendance decision making process.

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Appendix A: Sources of further information about these and related North American studies.

1. BLS Studies (NLSY79, NLSY97)

The NLS homepage is at: http://www.bls.gov/nls/home.htm. A key resource for either NLS cohort is the handbook, to be found at: http://www.bls.gov/nls/handbook/nlshndbk.htm. The current user's guide for NLSY79 is at: http://www.bls.gov/nls/79guide/nls79usg.htm. The current user's guide for NLSY97: http://www.bls.gov/nls/97guide/nls97usg.htm. The NLS bibliography is found at: http://www.nlsbibliography.org//. Additional information can be found at: http://www.chrr.ohio-state.edu/nls-info.

2. NCES Studies (Especially NELS:88)

Information on the various child and youth cohort longitudinal studies conducted by the U.S. Department of Education's National Center for Education Statistics (NCES) can be found on the NCES website. The NCES World Wide Web Home Page can be found at: http://nces.ed.gov, and the NCES World Wide Web Electronic Catalog is to be found at: http://nces.ed.gov/pubsearch/index.asp.

Information on NELS:88 is available in several forms. A public use version of the NELS:88 CD-ROM with Electronic Codebooks (ECBs) can be obtained free of charge from the National Center for Education Statistics. This CD (data product **NCES 2002-322)** includes the following:

1. Complete questionnaires from all five rounds of NELS:88.
2. A data file user's manual for base year through fourth follow-up.
3. Megafiles for longitudinal analysis of NELS:88 data (1988-2000).
4. A statistical analysis report, *Coming of Age in the 1990s: The Eighth-Grade Class of 1988 12 Years Later.*
5. An annotated bibliography of publications using NELS:88 data.

The NELS:88 CD-ROM can be obtained from the NCES Project Officer, Dr. Jeffrey Owings: Jeffrey.Owings@ed.gov; National Center for Education Statistics, 1990 K Street, NW, Washington, D.C. 20006, USA; (202) 502-7423.

National Education Longitudinal Study of 1988 (NELS:88) data file *user's manuals* or *methodology reports* were produced in each survey way. This documentation can be found on the NCES Web Site http://nces.ed.gov/pubsearch/getpubcats.asp?sid=023 From the NCES web site, documents can be searched and downloaded.

Beginning with the initiation of NELS:88, NCES has produced selected analysis reports using the NELS:88 data. These reports can be found in electronic format on the NCES Web Site under http://nces.ed.gov/pubsearch/getpubcats.asp?sid=023.

To aid researchers in locating reports that have used NELS:88 data, NCES has created a comprehensive annotated bibliography of reports (including doctoral dissertations) that used NELS:88 data. This bibliography can be found on the NELS:88 Web Site at: http://nces.ed.gov/surveys/nels88/ as well as on the NELS:88 CD-ROM release of the data (NCES 2002-322). Many NELS:88 (and NLS-72, HS&B and ECLS-K) publications also appear in the Educational Research Information Center database (ERIC) http://www.askeric.org/.

American Longitudinal Studies of Children

The principal studies (including the National Survey of Children, the Canadian National Longitudinal Survey of Children, Children of the NLSY, and the National Child Development Study) are summarized in: *Formulating A Design for the Early Childhood Longitudinal Study: A Review of Longitudinal Studies*. 1997. Green, P.J., Hoogstra, L.A., Ingels, S.J., Greene, H., and Marnell, P.K. Washington, D.C.: National Center for Education Statistics (NCES W.P. 97-24). (To download this document, go to the NCES electronic catalogue [http://nces.ed.gov/pubsearch/] and request document 9724). The Early Childhood Longitudinal Study, Kindergarten Cohort, and the Early Childhood Longitudinal Study, Birth Cohort, are documented at http://www.nces.ed.gov/ecls/. Health-related behaviors are studied by the National Longitudinal Study of Adolescent Health (http://www.cpc.unc.edu/projects/addhealth/) and substance abuse behaviors by the longitudinal Monitoring the Future study (http://monitoringthefuture.org/) (a bibliography for the study can be found at www.icpsr.umich.edu/SAMHDA/SERIES/mtf-bibl.html).

Canadian Studies of Youth (YITS)

In addition to the Canadian National Longitudinal Survey of Children noted above, the Youth in Transition Study (YITS) should be instanced as a major youth panel study that provides an excellent model for studying key transitions in the lives of youth.

YITS is conducted by Statistics Canada. Its aim is to study both labor market and educational transitions of youth. Two age cohorts (18-20, 15) were surveyed in 2000. The fifteen year olds were sampled within schools, and completed the OECD Programme for International Student Assessment (PISA) test; their parents were surveyed as well. Integration with PISA provides a basis for international comparisons, as well as a baseline ability measure (the primary focus of the PISA assessments in 2000 was reading; secondary foci were science and math). The panel will be studied for several years; however, the upward age bound for YITS has not yet been determined.

Detailed information about YITS -- including its objectives and design, its integration with PISA, survey content, research questions, methodology, data availability, and project contacts, can be found at: http://www.statcan.ca/english/IPS/Data/81-588-XIE.htm.

Appendix B: **Content of the NLSY and NELS:88 Research Instruments**[3]

B.1 NLSY79 Instrumentation: questionnaire content areas

NLSY79 contains core sets of questions on NLSY79 Major Data Elements. Although information on these topical areas has been collected during each survey years, users should be aware that the number of questions on a given topic as well as the working and universe for each question may differ from year to year. Additional sets of questions on a variety of factors potentially impacting on a young person's labor force attachment have been included during select survey years. The initial survey collects information on family background, knowledge of the world of work, a retrospective evaluation of labor market experience, the influence of significant others, and an abbreviated Rotter locus of control scale. Subsequent surveys have included questions on, for example, job search methods, migration, attitudes towards work, educational/occupational aspirations and expectations, school discipline, self-esteem, child care, pre- and post-natal health behaviors, drug and alcohol use, delinquency, time use, AIDS knowledge, childhood residence and neighborhood problems.
Finally, NLSY79 respondents have been the subject of a number of special surveys including the High School and Transcript Surveys, conducted by the National Center for Research in Vocational Education, the Profile of American Youth - ASVAB administration sponsored by the U.S. Department of Defense, and the NICHD sponsored child assessments.

Major Data Elements

Major data elements for the NLSY79 are listed and briefly described below. These categories include information available not only on the NLSY79 main files but the workhistory and geocode constructed data files. This listing is by no means comprehensive and not all data elements are necessarily present for all respondents in all survey years.

1. **Demographic & Family Background Characteristics.** Information on each respondent's racial/ethnic identification, sex, date of birth, state or country of birth, number of siblings, parents' birthplace-education-work experience, religious affiliation, childhood residences from birth to age 18, and 1990 immigration/visa status has been collected during select survey years.
2. **Household Composition.** For each household member living in the respondent's household, information is available on the person's sex, relationship to respondent, age, highest grade completed, and work experience in the past year.
3. **Educational Status & Attainment.** Current school enrollment status, highest grade attended or completed, attainment of high school diploma or GED, type of high school curriculum, college status, major field of study at college, and types(s) of college degrees are available.
4. **High School Experiences.** Transcript data is available for 8,778 NLSY79 respondents who were expected to complete high school during the 1980-1983 survey years. Information on up to 64 high school courses, including course descriptions, final grades, and credit received, was collected. In addition, data were gathered from the record of the last secondary school attended by the NLSY79 respondents. This set of variables includes both respondent-specific and school-specific information on such factors as: (a) the respondent's school enrollment status, high grade attended, remedial classes taken, and scores/percentiles/grade levels for various intelligence and aptitude tests administered during the youth's schooling; and (b) each school's total enrollment,

[3] Material in this appendix is adapted from the *NLSY Handbook* (prepared for BLS by the Center for Human Resource Research, The Ohio State University); and from the *NELS:88 Base Year to Fourth Follow-Up Data File User's Manual* (Curtin, Ingels, Wu and Heuer, NCES, 2002).

grading system, types of curricula offered, dropout rate, student body composition, and staffing characteristics.

5. **Aptitude & Intelligence Scores.** In addition to the aptitude and intelligence scores collected during the survey of high schools described above, scores from the 1980 administration of the *Armed Services Vocational Aptitude Battery* (ASVAB) are available for 11,914 NLSY79 respondents. These data include individual respondent raw scores, standard scores, scale scores, and standard errors for each of the ten test sections, e.g. general science, arithmetic reasoning, work knowledge, mechanical comprehension, etc., and two constructed AFQT (Armed Forces Qualifications Test) scores.

6. **Training.** Types of non-governmental sponsored vocation/technical training programs in which a respondent was enrolled since the last interview including information on the occupation in which training was received, dates of enrollment and completion, type of school, any subsequent training received and types of certificates or licenses received has been collected. The 1993 survey included a series of questions on the method(s) used to learn skills required on the current job and the potential transferability of skills acquired in various on and off the job training programs in which the respondent had participated.

7. **Government Training & Jobs** Data are available on government-sponsored training programs in which a respondent was enrolled since the last interview including current enrollment status, dates/hours of participation, periods of non participation, whether the program was part of JTPA/CETA or WIN, type of occupation or on-the-job training received, types of classroom training and supportive services provided, and rate of pay during participation. Information on jobs in which a respondent was employed, including occupation code, types of classroom training/supportive services provided and job placement information, is collected along with detailed job information in a respondent identifies a job as government-sponsored. Government training and employment were abbreviated in the post-1986 surveys.

8. **Military Experience.** Information on enlistment intentions, attitudes toward the military, dates of military service/reserve duty, branch of service, military occupation, pay grade, income, education/training received, and reasons left military or re enlisted is available. The military experience questions were abbreviated after 1985.

9. **Labor Market Activity & Transitions.** Data include current labor force status, i.e., activity during most of the survey week (employed, unemployed, out of the labor force) as well as, for those employed, job characteristics, job satisfaction, and hours worked per week for the current/most recent job. Detailed job information on up to five employers with whom the respondent worked since last interview including start-stop dates of employment, hours worked, reason left job, up to four gaps in employment while associated with an employer, job characteristics including occupation, class of worker, rate of pay, and collective bargaining activity in setting wages, is provided. Activity of the respondent during periods when s/he was not associated with an employer or in the military (i.e., weeks not working, weeks spent looking for work, reasons not looking for work) is available, as in information on the job search behavior of those unemployed and plans to seek employment for those out of the labor force. Types and success of various job search methods used by unemployed respondents to find work have also been collected.

10. **Detailed Workhistories.** A week-by-week longitudinal work record of each respondent from January 1, 1978 through the most current survey date has been constructed and is available as a separate data file. These weekly data are arranged in three primary arrays: (a) an A *array* of the respondent's labor force/military status each week beginning in January 1978; (b) an HOUR *array* of the usual hours worked per week at all jobs beginning in January 1978; and (c) a DUALJOB *array* containing additional job numbers for respondents who work at at more than one job simultaneously in any week beginning in January 1978. The workhistory data also include information on dates of active military service, key labor force variables, and detailed

information on each of up to five jobs per survey year. Key linkage variables are provided to facilitate use of this data with the main youth, geocode and child files.

11. **Marital History.** Information on a respondent's marital status at each survey date, changed in marital status since last interview, and month/year of each marital status changes as well as information on a respondent's spouse that has included birth/death dates, occupation, educational attainment, labor force status, religious affiliation, and for select points in time, health limitations are available. A set of constructed marital history variables are present on the supplemental fertility file described below.

12. **Fertility.** Fertility data include information on all pregnancies/live births, a cumulative inventory of all children reported and the residence status of all children, contraceptive methods utilized, birth expectations and wantedness information, confidential abortion reports, as well as ages at menarche and first intercourse. A supplemental set of constructed and edited fertility variables provides: (a) revisions to dates of birth, gender, and usual living arrangements for all respondents' children; (b) constructed variables such as beginning and ending dates of marriages, ages at first marriage/first birth, spacing between births and between marriage and first birth; and (c) a variable evaluating the consistency of each respondent's longitudinal fertility recorded between the 1979 and 1982 survey years.

13. **Child Care.** Types of child care utilized by female respondents, e.g. care by relatives, non-relatives, day care center, nursery or pre-school, self care, etc., types of child care payments incurred, and number of hours and/or days spent in child care are available for select survey years. Retrospective child care experiences and child care arrangements during the first three years of life for all children of at least one year of age were also collected.

14. **Income & Assets.** Income received in the past calendar year by the respondent, spouse, or other family members and more limited information in many years for opposite sex partners is available, including: (a) wages and salaries, military service, farm or own business, Social Security, pensions and annuities, and alimony/child support; (b) monthly income amounts received by the respondent and spouse from unemployment compensation, AFDC, food stamps, and other public assistance; and (c) sources of income for other family members. Asset information collected during 1985-1990 and 1992 include types of and total market value of property owned by the respondent (e.g., real estate, farm, business), the value of other assets including vehicles and savings accounts, as well as the total amount of debts owed including mortgages, back taxes and debts over $500. Data on net savings/dissavings are available beginning with the 1989 survey.

15. **Health.** Height, weight, presence and duration of health conditions preventing or limiting labor market activity including the specific type of health condition, causes, and part(s) of the body affected *)(ICD-9 codes)*, type of work-related injuries or illnesses, and knowledge of AIDS are provided. Recent surveys have collected information on health care/hospitalization plans. Data on pre-natal health care, infant feeding practices, illnesses of /treatment for infants, well-baby care as well as accidents and injuries of children were collected during select survey years from female NLSY79 respondents.

16. **Alcohol & Substance Use.** Alcohol use data, collected during select survey years, include: consumption of alcohol, frequency of use, quantity consumed and whether such use has impacted on school work or job performance. Substance use data include: age at first use, extent of use of marijuana/hashish, amphetamines, barbiturates, cocaine, heroin, use of such substances on the job, and the use of alcohol and cigarettes during pregnancy.

17. **Illegal Activities.** Self-reported participation and income from various delinquent and criminal activities such as skipping school, alcohol/marijuana use, vandalism, shoplifting, drug dealing, robbery, as well as reported arrest records and contacts with the criminal justice system were collected during the 1980 survey.

18. **Attitudes & Aspirations.** A collection of attitude variables, available for select survey years, includes information from the *Internal-External Locus of control Scale* (Rotter 1966), the

Mastery Scale (Pearlin et al. 1981), the *Self-Esteem Scale* (Rosenberg 1965), the *Center for Epidemiological Studies Depression (CES-D) Scale*, and select administrations of questions on attitudes toward women and work, occupational aspirations, work commitment, knowledge of the work of work, perceived problems in getting a good job, future expectations about marriage/education/employment, responses to a series of hypothetical job offers, and the attitude of the most influential person in each respondent's life toward certain key career, occupation , residence and childbearing decisions.

19. **Geographic Information.** General geographic information on each respondent including county, state, region of residence at birth and at age 14, region of residence at each interview date, whether current residence is urban-rural or in a SMSA is available on the main NLSY79 data files. Additional geographic information is available on the restricted-release geocode data file described below.

20. **Detailed Geocode Data Files.** Information on state, county and SMSA/ MSA/ CMSA/ PMSA of respondent's current residence, location of most recent college attended, and select environmental variables from the *County and City Data Books* for county or SMSA of current residence is available as separate geocode data files that will be released only to persons who research work is related to the National Longitudinal Surveys of the Bureau of Labor Statistics and who satisfactorily complete the BLS geocode accessing agreement procedure.

21. **Geographic Proximity/Mobility Matches.** A separate data file details the geographic proximity of the relatives, friends and acquaintances of female respondents interviewed during 1983-1985 and provides measures of geographic mobility for these respondents during those years.

B.2 NLSY97 Instrumentation: content areas

1. Employment

Designed to capture each youth's earliest experiences in the labor market, the NLSY97 includes three different categories of labor market activity: Employee jobs (those in which the respondent had an ongoing association with a particular employer) held since the age of 14, freelance or self-employment jobs, and gaps between jobs. A freelance job is defined as any job for which the respondent performs tasks for a number of people but does not have a specific boss, such as babysitting or mowing lawns. In rounds 1 and 4, respondents also reported their work experience in the week before the survey.

Employee jobs. The set of questions on employee jobs asks respondents age 14 and older at the time of the survey (all respondents beginning in round 3) about jobs held since their 14th birthday. The youth reports information about the job at the time he or she started working, such as the usual number of hours worked per week; the regular rate of pay (amount per month, per week, per day, or per hour); and the amount of non-wage, non-salary pay (overtime, tips, incentive pay, etc.). Youths also provide a description of the industry and occupation of the job. These items are coded according to the Census Bureau's 1990 3-digit industry and occupation codes. The survey solicits the same information as of the stop date or interview date for all employee jobs lasting more than 13 weeks; this second series of questions captures any changes that may have occurred during the youth's tenure at the job. All respondents who report a gap of a week or more at an employee job (other than paid vacations or sick leave) answer a follow-up question about the reason (for example, on strike, on layoff, on unpaid vacation) for that gap. Respondents also state the number of weeks spent looking for work or on layoff during that gap. Any youth classified as not looking for work provides the reason (for instance, did not want to work or on vacation). Respondents who report a job that ended after the date of their 16th birthday (or for those who are currently 16 and over and report an ongoing job) answer an additional series of questions. This information includes the class of worker (government, private, nonprofit, unpaid worker in a

business owned by a member of their family, Armed Forces), the type of benefits offered (medical, dental, unpaid maternity leave, etc.), and the number of paid vacation or sick days per year to which they are entitled at the time of the survey or the job's end date. Other questions in this section ask about the respondent's regular work shift; collective-bargaining status; the sex, race, and age of the respondent's immediate supervisor; the number of employees working at the same location as the respondent; and the number of employees at all locations. The survey also collects data on the respondent's general satisfaction with the job and the reason for leaving a past job.

Freelance jobs. In rounds 1-3, respondents age 14 and older at the time of the survey (all respondents beginning in round 3) were questioned on the freelance jobs they have held since their 14th birthday. This changed in round 4, when only respondents born in 1983-84 answered questions in the freelance jobs section. For all freelance jobs, the youth states the start and stop dates (month and year). The questions on freelance employment gather information about the usual number of hours the respondent worked per week, the usual weekly earnings, the total number of days worked per week (weekdays/weekend days), and the number of hours per weekday/weekend worked.

The freelance section in rounds 1-3 asked additional questions of self-employed respondents, those who are age 16 or older and who usually earn $200 or more per week in a freelance job. The youth defined his or her industry and occupation and stated the number of people who worked for him or her. Finally, those who reported that the job had ended provided the reason (for example, end of seasonal-type work or return to school). In round 4, these data were collected as part of the self-employment questions in the regular employment section, as described above.

Employment for youths ages 12 and 13. In rounds 1 and 2, respondents ages 12 and 13 provided information about all jobs held since the age of 12 (without explicitly distinguishing between employee and freelance jobs). The type of information collected for each job was the same as that described above in the freelance section for youths age 14 and older. Since every respondent reached age 14 by the round 3 field period, they all now answer separate questions about employee and freelance jobs.

Work experience in the week before the survey. Using questions from the *Current Population Survey (CPS)*, the round 1 and round 4 surveys asked respondents age 15 and older about their labor force status (for example, working, looking for work, unable to work) in the week before the current interview. Employed respondents detailed the characteristics of their current job(s), such as usual number of hours on the main job, number of hours on all other jobs, number of overtime hours, reason worked part time, etc. Youths classified as not working reported job search activities during the previous month. Users should note that the questions were not included in rounds 2 and 3.

Gaps between jobs. Any youth age 14 or older who reports a period in which he or she is not working at an employee job states the number of weeks spent during that time working at a freelance job or searching for another employee job. Those who do not report search activity during a specific time period answer questions about the reason that no search activity was undertaken (for example, did not want to work, had health problems, on vacation). The survey also collects data on the type of search activity in which the youth participated, for example, contacted an employer directly, contacted an employment agency, or placed an ad.

2. Schooling

The schooling section of the youth questionnaire contains questions on the respondent's educational attainment, experiences, and coursework. The round 1 parent questionnaire also solicited information concerning the youth's past and current schooling experiences.

The schooling section first asks about the respondent's current enrollment status. Youths who report that they are not enrolled provide their reason(s) for leaving school and the date at which this separation occurred. The respondents also state the highest grade level they have attended

and the highest grade level they have completed. In addition, the survey asks all youths if they were ever suspended from school. Those who have been suspended state the grade level(s) in which this occurred and the duration of each grade's total suspensions.

In round 1, all youths in the 12th grade or lower during the fall 1996 school term answered questions about that term, including the number of days the youth was absent, whether the youth had something of value stolen, and whether the youth was involved in a physical fight.

Interviewers administered the *Peabody Individual Achievement Test (PIAT) Math Assessment* to youths enrolled in the 9th grade or lower during round 1. In rounds 2-4, administration of the *PIAT* was restricted to respondents who were 12 years old as of December 31, 1996, and who were enrolled in 9th grade or lower during round 1, providing several scores for respondents born in 1984. Researchers can potentially combine these test scores with information on math courses the youth took to assess correlations between curriculum and math performance.

High school. If a respondent is currently enrolled in high school, the survey collects information on the expected graduation date. Those not enrolled in high school state whether they received a regular high school diploma or a GED and the overall marks they received during high school. Youths who have attended 9th grade or higher provide information about the overall marks they received in 8th grade and on their course of study in high school (for example, college prep, vocational). The respondents then list the types of math, science, and other courses taken from 7th grade through high school; information about whether each course was an honors course is also recorded. Finally, the survey collects scores on standardized achievement tests, such as the SAT or ACT; in rounds 2-4, scores were only collected from respondents in 11th grade or higher.

School-based learning programs. The survey instrument contains questions on school-based learning programs (apprenticeships, cooperative education, internships, mentoring, tech-prep, etc.). Respondents who participated in school-based learning programs in high school answer questions about the program's characteristics, such as the type of program, time spent at the work site, whether the respondent was paid and the rate of pay. Other questions include whether the youth took any classes at the work site and whether the employer wrote an evaluation of the youth.

College. Although relatively few respondents are enrolled in college during the early survey rounds, the survey contains a number of questions related to college experiences. This section asks youths who report being enrolled in college for the number of years attended at any college (either 2-year or 4-year colleges) and the number of colleges attended. Information collected includes whether the college is publicly supported, the type of degree sought, the total credits required to graduate, and the tuition and fees. The youth also reports on sources and amounts of financial aid received while at each college. For each college term, the survey gathers data on the number of college credits the respondent took and earned and the respondent's grade-point average, primary and secondary major, and full- or part-time status. Finally, respondents report the name and address of each college; survey staff use this information to provide the Integrated Postsecondary Education Data System (IPEDS) Code of each institution. IPEDS codes are only available in the geocode data; see chapter 8 of this handbook for more details about this restricted-use data set.

Parent questionnaire. The round 1 interview asked the responding parent about the youth's current enrollment status and grade level. The responding parent also provided information about all schools the youth attended since the 7th grade (including homeschooling) and about gaps in enrollment of 1 month or more. The "school finder" aided in obtaining and verifying the name and address of each school.

This section also inquired about any academic classes the youth took during a school break in the 9th grade or higher and the reason for taking the classes. For youths who had only been homeschooled since the 7th grade, the parent stated whether the youth had ever taken the SAT, ACT, or AP tests; the year the youth took the tests; and the highest score received. Additional educational information collected from the responding parent included whether or not the child

ever enrolled in Head Start, whether he or she ever repeated or skipped a grade, and the age the youth entered 1st grade.

3. Training

Respondents age 16 and older as of the interview date report on their participation in training programs. These questions solicit information about the youth's reasons for participating in each program; the type of certification the youth earned, if any; and the program's length, completion status, and source of funding. If the respondent states that the training was for a specific employer, follow-up questions ask about the occupation for which the training program prepared the respondent and the reason for enrolling in the training program. Finally, the survey gathers data about services provided, such as job search assistance.

4. Income, assets, and program participation

This section describes the data collected on the financial characteristics of the respondent. Similar data, described under family background in this section, are also gathered for certain adults in the youth's household. Users should note that a number of questions in these sections of the questionnaire are addressed only to independent youths. Independent youths are those who meet at least one of the following criteria: Are age 18 or older, have a child, have ever been married or are currently in a marriage-like relationship, are no longer enrolled in school or are enrolled in a four-year college, or report not living with any parent or parent figure.

Income. The survey asks all respondents about their income from wages, salaries, or parental allowance during the previous calendar year. Independent youths also report in depth on other income received in the last calendar year, such as self-employment income, receipt of child support, interest or dividend payments, or income from rental properties.

Parent questionnaire. In round 1, the NLSY97 collected data from the responding parent on the 1996 earnings and income of the youth. In addition, parents reported on the amount of financial support given to independent youths still living in the household.

Assets. In rounds 1-3, independent youths provided information about current asset holdings. Questions included the market value of any residence or business, whether or not the respondent paid property taxes in the previous year, the average amount spent on utilities per month, and the amount owed on motor vehicles. Other questions asked about the respondent's current checking/savings account balances, the value of various assets such as stocks or CDs, and the amount of any loans of at least $200 that the youth received in the last calendar year.

Beginning with round 4, the questions in the asset section remain the same, but the universe for the asset section is more limited. Respondents answer these questions in the first interview after they become independent, the first interview after they turn 18, and the first interview after they reach age 20. Respondents will answer these questions at regular intervals in future rounds.

Program participation. This section questions independent youths about their participation in government programs. Included are specific questions (number of spells, duration of each spell, amount of benefit, etc.) regarding a number of government assistance programs such as Unemployment Compensation, AFDC/TANF/ADC, and food stamps. See table 2.7 at the end of this chapter for further details.

5. Family formation

Marriage. Respondents who were at least 16 years old by the end of the previous calendar year provide information about their history of marriage and marriage-like relationships. Along with the legal status and length of each relationship, this section gathers information about the age, highest grade completed, employment status, and race/ethnicity of each spouse/partner not listed on the household roster. For each relationship, the youth also reports changes in the relationship status such as separation, divorce, or marriage. In rounds 1 and 4, respondents who were currently married or involved in a marriage-like relationship answered questions about the quality of that relationship. Round 1 questions asked about specific behaviors, for example, how often the spouse/partner screams or yells, criticizes the respondent's ideas, blames the respondent for his or her problems, and vice versa. A shorter series in round 4 collected the respondents' rating of

closeness between themselves and their spouse/partner, as well as the overall level of conflict in the relationship.

Fertility. A series of questions asks about the children of respondents who report having given birth to, fathered, or adopted a child. This section collects the number, gender, and age of all biological and adopted children, including children who are deceased or have been given up for adoption. Fertility data also include characteristics of the child's other biological parent, such as race, age, and highest grade completed, and the type of relationship the respondent had with that person (married, dating, separated, etc.). Finally, the fertility questions solicit information about the biological parents' legal responsibility or custody rights with respect to the child.

A new set of questions in round 4 addressed only male respondents who had fathered a child. First, the respondent provided current information about the mother of each child, such as her enrollment and employment status, program participation status, and income. He also stated whether he currently had a close relationship with the mother. The survey then asked about the respondent's relationship with each of his children. Respondents reported whether they participated in prenatal activities such as going with the mother to the doctor, buying things before the baby was born, and being present at the delivery. If the respondent had seen the child in the past month, he stated how often he performed activities such as bathing or dressing the child, preparing a meal for the child, or reading books to the child. Finally, male respondents provided information about child support. Respondents first reported the amount of support awarded in a child support agreement and then stated whether they had provided additional informal support, such as performing household repairs, buying clothes for the child, or buying household items or gifts for anyone in the household, in the past 12 months.

Information on other pregnancies is gathered in the self-administered section of the questionnaire. Female respondents report the number of pregnancies that did not result in live births, their age at the time of each such pregnancy, the month and year each pregnancy ended, and the outcome of each pregnancy. Male respondents state the number of times they have gotten someone pregnant, the number that ended in a live birth, and the number that ended in abortion.

6. Family background

Parent's background. Questions in the round 1 parent questionnaire determined the responding parent's nationality, month and year of birth, birthplace, and religious preference. In addition, the survey collected information about the responding parent's number of siblings, whether he or she lived with both biological parents while growing up, and the ages and highest grade completed of his or her parents. The responding parent also reported this data for his or her current spouse. If the youth had been in contact with a nonresident biological parent since the age of 10, the same set of questions sought information about that nonresident parent.

Parent's history. In the round 1 parent questionnaire, interviewers collected historical data on the responding parent's employment history since the parent's 18th birthday or the youth's date of birth, whichever was earlier. For each spell of employment lasting at least 3 months, the responding parent was asked about the usual number of hours worked per week. In a similar fashion, this section established a marital/partner history for the responding parent, with questions seeking information on the length of the marriage and the employment status of the spouse during the marriage. Next, a number of questions recorded the history of participation in various government programs like AFDC/TANF, Medicaid, SSI, and WIC.

Parent's current status. The round 1 parent questionnaire obtained detailed information on the current status of the respondents' parents, as described below. In subsequent rounds, limited data are collected in the youth questionnaire and household income update.

Youth questionnaire. Demographic data from the household roster section of the questionnaire are available for parents who lived in the same household as the youth; the household information section below describes these data in detail. The round 2 youth questionnaire asked respondents who were classified as independent (see the income section above) or who were age 14 or older

by the end of 1997 to report the 1997 earnings of each parent. In rounds 3 and 4, all respondents reported each parent's earnings in the previous calendar year.

Household income update. In the surveys following round 1, a youth respondent's parent completes this self-administered paper supplement. It collects information on the income of the respondent's parent and his or her current spouse/partner in the previous calendar year.

Parent questionnaire. In round 1, the youth's responding parent stated his or her present employment status, marital status, highest grade completed, and participation in government programs. Information on the resident parent's earnings and income in 1996 was gathered; similar questions summarized the same information with regard to the responding parent's spouse. This section of the parent questionnaire also elicited information on the asset and debt holdings of the responding parent and his or her spouse. Additional questions asked about the amount received from government programs in the previous year.

Parents who had a youth ages 12 to 14 answered a series of questions on the parent's attitude toward self (for instance, always optimistic about the future or hardly ever expect things to go my way), toward certain behaviors, and toward the relationship with his or her partner. The responding parent also provided information on religious beliefs and practices.

Interviewers also collected information on the general health and the presence of any long-standing health problems of the responding parent and his or her spouse. The responding parent stated his or her own height and weight and that of his or her partner. If the youth was adopted, the responding parent reported the height and weight (if known) of the youth's biological parents.

Youth residential history. Information about the youth's residences has been collected in each survey. In round 1, the parent questionnaire and the screener, household roster, and nonresident roster questionnaire gathered these data; some of the information is updated in the youth questionnaires in subsequent rounds.

Youth questionnaire. The rounds 2-4 instruments collected information on the changes in the youth's living and custodial situations since the last interview. Questions gathering the dates of each move to a new State/city/county and the parent figures the youth has lived with since the last interview update the information from previous rounds.

Parent questionnaire. The round 1 parent questionnaire queried the responding parent about whom the youth had lived with since birth. For adopted youths, information includes whether the youth ever lived with either biological parent. For each youth not living with both biological parents, the survey asked whether the responding parent held legal responsibility or legal custody of the youth. If only the youth's biological mother was listed on the birth certificate, follow-up questions determined whether the biological father had been legally identified through a blood test, court ruling, signed legal document, or other means.

Screener, household roster, and nonresident roster questionnaire. Information included the distance the youth lived from his or her biological parents (if they were alive) or the date that the youth's biological parents died.

Household environment. Respondents ages 12 to 14 (as of December 31, 1996) have answered a brief series of questions about their household environment in each survey round. These questions include whether the respondent's household was conducive to studying in the past month and the number of days in a typical week that the family interacts. The round 1 survey also asked these same respondents to report the number of days in a typical week the youth heard gunshots in the neighborhood.

Household information. Data about other residents in the respondent's household were collected in the screener, household roster, and nonresident roster questionnaire in round 1; these questions are included in the youth questionnaire in later survey rounds.

Youth questionnaire. In surveys after round 1, the first section of the youth questionnaire identifies the youth's resident and nonresident parents and establishes the relationship of all non-relative residents to the youth. The current marital status of each nonresident parent is collected, while follow-up questions verify demographic data (such as marital status, age, and

race/ethnicity) on each household occupant from the previous round and record any changes. This section also asks about enrollment status, highest grade completed, and the highest degree he or she has completed (if currently enrolled). Current labor force status is collected for residents age 16 and older. Finally, round 2 respondents age 14 and older reported the 1997 earnings of each household resident who was also age 14 or older. In rounds 3 and 4, all respondents provided information about the previous year's earnings for household residents age 14 or older.

Screener, household roster, and nonresident roster questionnaire. In round 1, this instrument collected the demographic and relationship information for household occupants described in the above paragraph. For each resident age 16 and older, the roster also asked for the number of weeks the resident worked in 1996 and the usual hours worked per week during that period. The nonresident roster section of this instrument determined the relationship to the youth of any key nonresident relatives (biological, step-, or adopted parents; siblings; spouses; children; or other parent of youth's children) and gathered the information summarized in table 2.6. Note that, while it was not collected directly, the sex of nonresident relatives can be inferred from relationship codes for parents, spouses, siblings, and children.

7. Expectations

The round 1 survey asked respondents who were age 15 or older by the end of the previous calendar year to assess the probability of certain events occurring in their lives over the next year, by the time they turn 20, and by the time they reach 30. The list included events such as working more than 20 hours per week, serving time in prison, and earning a 4-year college degree. The round 4 survey asked all respondents similar questions about the likelihood of events taking place over the next year and within the next 5 years.

Parent questionnaire. In round 1, responding parents of youths age 15 and older answered a similar set of questions about events that may occur in the youth's life.

8. Attitudes, behaviors, and time use

Attitudes. In each round, respondents report on their contact with any absent parents and state their perception of the amount of supportiveness displayed by each parent figure. Also collected in rounds 1-3 from respondents ages 12 to 14 as of December 31, 1996, were data on the youths' opinions about their parent(s) (for example, want to be like him/her, enjoy spending time with him/her). In each round, respondents' beliefs about their parents' knowledge of their activities are reported. Younger respondents provide further information about their parents' relationship with spouses/partners and about contact between biological parents who live separately. In round 1, a series of questions asked respondents about the activities of their peers including the percentage of students in their grade they believe to be involved in a gang, an organized sport, or volunteer work. The series addressed peer behavior, such as the percentage of students they believe smoke cigarettes, drink alcohol, or use drugs. In addition, respondents reported their attitudes toward their teachers and perceptions of the school environment (for example, whether the respondent considers school a safe place) during the round 1 survey.

Behaviors. A series of questions on health-related behaviors in each survey asks youths whether they have ever smoked cigarettes, consumed alcohol, or used illegal drugs, as well as whether and how often they have engaged in these activities within the past month. This section also solicits data on the age when these activities first occurred. Respondents answer questions about their participation in criminal activities, such as assault, theft, battery, or carrying a handgun.

All respondents are questioned about the frequency of their dates and the number of different people they have dated. Respondents age 14 or older as of the end of the previous calendar year (all respondents in round 3 and beyond) provide information on their sexual activity. These questions include frequency of sexual intercourse and birth control use. Youths ages 12 or 13 as of December 31, 1996, answer a series of questions on how decisions concerning their activities are made (for example, who determines how late the youth can stay out at night, who determines the type of TV shows and movies the youth can watch). If the youth reports that the parents make

the rules or that the parents and the youth jointly decide, follow-up questions ask about the number of times the youth broke the rules in the last 30 days.

Parent questionnaire. Responding parents of youths ages 12 or 13 answered a similar series of questions on control and autonomy during the initial interview. Follow-up questions asked about the number of times the youth broke the rules in the last 30 days.

Time use. In the series of questions on time use in rounds 1-3, respondents who were not in school or employed and were at least age 16 (round 1) or at least age 15 (rounds 2 and 3) reported details about the way they spend a typical day. Information collected includes the time they usually wake up each day, whether they go to a place on a regular basis, and the time that they leave for and return from that place. In round 1, youths ages 12 to 14 assessed the amount of time they spent in the prior week doing homework, watching television, reading, or taking extra classes or lessons.

9. Health

All respondents provide information about their general health and state their height and weight. The round 1 questionnaire asked respondents to report whether they had entered puberty and their age at onset; this information is updated in subsequent rounds if puberty was not completed at the previous interview. In round 1, the health section also questioned youths not living with their parents about their health insurance coverage (for instance, covered by job, covered by military-related plan, not covered).

The initial interview asked youths who were 13 years old as of December 31, 1996, about their practices with regard to health-related behaviors such as seatbelt use and exercise. In addition, these youths stated their opinions about whether smoking cigarettes or drinking alcohol contributes to certain health problems (getting AIDS, getting heart disease, harming an unborn child, etc.).

Parent questionnaire. The responding parent also answered questions about the youth's health during the first survey round. In particular, this section questioned the parent about whether the youth suffers from or takes medication for any chronic health problems like mental retardation, blindness, cancer, or asthma. Follow-up questions determined the condition, the age of the youth when the condition was first noticed, and whether the condition currently limited the youth. Parents reported on the youth's health insurance coverage for youths who live at home. Finally, if the youth was 13 years old, the responding parent stated his or her perception of the health effects of drinking alcohol.

10. Environmental variables

The NLSY97 main data set includes several created variables that describe the youth's permanent residence. The main variables indicate whether the youth lives in an urban or rural area, whether the youth lives in a Metropolitan Statistical Area (MSA), and in which Census region the youth resides. In addition, an unemployment rate variable reports the unemployment rate (within a 3-point range) for the youth's local labor market. These variables permit researchers to obtain general information about the youth's geographic area without needing access to the restricted-use geocode CD-ROM.

Youth questionnaire. After the initial survey, the youths answered questions about residential moves since the date of last interview. They provide the dates of each move to a new State, city, or county.

11. Event history variables

These special created variables summarize the timing of a variety of major life events for each respondent. The event history variables are divided into four major arrays. The first array contains the employment status (working for employer #1, unemployed, out of the labor force, etc.) of each respondent for each week from the respondent's 14th birthday to the interview date. The marital status variables, the second array, cover the respondent's marital or cohabitation status during each month from the respondent's 14th birthday to the month of the most recent interview. Possible status labels are never married and not cohabiting, never married and cohabiting,

married, legally separated, divorced, or widowed. Program participation status, the third array, is similar to marital status in its structure. For each month since the respondent's 14th birthday, these variables report whether the respondent was receiving economic assistance such as Unemployment Compensation, Aid to Families with Dependent Children (AFDC), or food stamps.

The fourth event history array presents the respondent's schooling experiences. Unlike the other constructions, this array provides most of the information on a yearly basis beginning with each youth's date of birth. In round 2, new monthly variables were created to capture information for each month from the respondent's interview date in round 1 to the interview date in round 2.

B.3 NELS:88 Instrumentation: Questionnaires and content areas

The NELS:88 questionnaires are in the public domain. They can be found at: http://nces.ed.gov/surveys/nels88/ as well as on the NELS:88 ECB in CD-ROM format (U.S. Department of Education data product **NCES 2002-322**). In designing the NELS:88 questionnaires, the research team kept in mind the longitudinal goals of the study and chose items that would be useful in predicting or explaining outcomes captured in later survey waves. Team members also sought, on the one hand, to ensure continuity and consistency with earlier NCES education longitudinal studies, and on the other, to address new areas of policy concern and recent directions in theory. Given that there were multiple respondent populations (students, parents, teachers, principals), another consideration was to identify the best source for each desired datum. The following questionnaires were employed in the study:

Table 3.3.—NELS:88 school-based survey instruments, by wave of administration: 1988-1992

Survey Instrument	Survey Wave		
	Base Year	First Follow-up	Second Follow-up
Student questionnaire	Yes	Yes	Yes
Early graduate supplement	No	No	Yes
New student supplement	No	Yes	Yes
Dropout questionnaire	No	Yes	Yes
School administrator questionnaire	Yes[a]	Yes	Yes
Teacher questionnaire	Yes	Yes	Yes
Parent questionnaire	Yes	No	Yes
High school transcript component	No	No	Yes[b]

[a] In the base year, there were two school administrator surveys: in the spring of 1988, the regular NELS:88 principal survey, and in the fall of 1989, a special principal survey on the topic of middle grades practices.

[b] The high school transcripts, which were collected in the second follow-up, span the entire high school career, including 10th grade—the modal grade of first follow-up sample members—and typically 9th grade, as well.

Source: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988 (NELS:88), 1988-1992.

Base-year through Second Follow-up Student Questionnaires

The 60-minute, self-administered student questionnaire used in each wave collected information on a wide range of topics, including

- student background
- language use
- home environment
- perceptions of self
- occupational or postsecondary educational plans
- jobs and household chores
- school experiences and activities
- work and social activities.

Base-year through Second Follow-up Student Cognitive Test Batteries

In addition to the student questionnaire, students completed a series of achievement tests for each wave of the study at their in-school or off-campus survey sessions. The combined tests, described below, covered four subject areas and included 116 items to be completed in 85 minutes. The four subject areas were reading, mathematics, science, and social studies. (For further information about the NELS:88 subject achievement tests, see Rock and Pollack, 1995.)

Dropout Questionnaires

The dropout questionnaires collected data about the following areas:

- the last school attended by the sample member and the school's climate;
- reasons for leaving school, and actions school personnel, parents, and friends took when the respondent stopped going to school;
- the sample member's likelihood of returning to and graduating from high school; and
- the sample member's current activities, employment history, and future plans.

First and Second Follow-up New Student Supplements

For the first and second follow-ups, sample members who were first-time NELS:88 participants—due to freshening or previous ineligibility or nonparticipation—completed the new student supplement questionnaire. The self-administered supplement took approximately 15 minutes to complete and gathered the same basic demographic information (such as birth date,

sex, family socioeconomic status, and race/ethnicity) that the base-year questionnaire had gathered for other students and their families. Because of the unchanging nature of the data, the follow-up surveys did not include questions on these topics again.

Questionnaires for the Student Sample in the Out-of-School Rounds

By the time of the third follow-up in 1994, very few NELS:88 eighth grade cohort members remained in high school. This meant that while previous questionnaires (and tests) had been administered in group settings in school and optically scanned, a different mode of data collection was now required. The dominant administration form for all 1994 sample members was a one-on-one telephone interview, in a computer-assisted format (CATI, or computer-assisted telephone interviewing). The design of the 1994 questionnaire therefore departs from that of the prior rounds. By moving to an electronic format, key information could be preloaded into the interview, and automated consistency checks could be built into the interview process, minimizing the missing/inconsistent data retrieval and backend editing tasks which were an important element of the in-school rounds.

NELS:88 Third Follow-up Student Interview

Just as the form of the third follow-up questionnaire in 1994 differed from the form of the earlier instruments, the content differed as well, as the sample members followed diverse pathways in their transition from high school to postsecondary education or to work. Instrument developers designed the third follow-up questionnaire to focus mainly on postsecondary access and employment and to elicit valid contemporary information about these topics while maintaining as much continuity as possible with the prior NCES youth transition studies, NLS-72 and HS&B. Specific content areas included academic achievement, feelings about respondents' postsecondary institution and/or job, detailed work experience, work-related training, and family structure and environment.

Interviews were conducted primarily by telephone, using CATI technology. For respondents without telephones, a paper questionnaire was either self- or field-administered. The CATI system presented the questionnaire items to the interviewer on a series of screens, each with one or more questions. Between screens, the system evaluated the responses and used the results to route the interview to the next appropriate question. The system also applied a series of cross-checks to the responses, such as valid ranges, data field size and data type (e.g., numeric or text), and consistency with other answers or data from previous rounds. In addition, when the interviewer encountered problems, the system could suggest prompts to use in eliciting a better or more complete answer.

High school completion. Approximately 16 percent of the NELS:88 cohort had not completed high school by August of 1992. Roughly 8 percent were still enrolled and 8 percent were high school dropouts. This section collected high school information for those sample members who had not completed high school at the time of the last interview and included questions about completion status, last high school attended, dates of enrollment, highest grade attended and completed, type of high school program, type of degree/certification offered by program, and GED completion date.

Postsecondary school access and achievement. The third follow-up of NELS took place two years after most NELS sample members graduated from high school; thus, many had enrolled in a postsecondary school (e.g., community college, 4-year program). For those who had

taken classes or enrolled in a postsecondary program, this section asked questions about each postsecondary institution the sample member attended, including level and control of institution, cost of tuition, dates attended, stopout activity (i.e., whether the respondent had taken time off from school but later re-enrolled), major/field of study, certificate/degree type, and certificate/degree completion and date. In addition, the questionnaire collected financial information, such as types and amount of financial aid received, and employment while enrolled.

Employment experience. The employment and income of NELS sample members, both those who were concurrently enrolled in postsecondary school and those who were not enrolled, are important to better understand the economic returns of education. This section collected information about the sample members' employment since the last interview, including spells of employment, number of jobs, job title and type of business, hours worked and income, apprenticeships, benefits, satisfaction, and expected occupation and income at age 30.

Work-related training. In addition to, or in place of formal education, workers often require specialized skills in order to do their jobs. Employers are increasingly turning to on-the-job training as a means for teaching employees new skills and competencies. The NELS questionnaire identified those who received on-the-job training and asked them about the type and amount of training, where the training took place, and how closely the training was related to their job. It also collected information about occupational licenses.

Environment. Non-economic returns to society, such as civic involvement, are outcomes also thought to be correlated with education. The NELS:88/94 instrument included questions about the leisure activities of sample members, such as time spent watching television, and participation in sports or religious activities. It also included items on community service and voting behavior. In addition, the questionnaire asked a set of questions about sexual activity.

Locating. The questionnaire collected locating information to aid in tracing the sample members for the next follow-up study. Items included sample member's current address and telephone number; addresses, telephone numbers, and relationship of two contacts; and driver's license information.

NELS:88 Fourth Follow-up Student Interview

The research team conducted the field test and full-scale NELS:88/2000 interviews both by telephone using CATI and in person using computer-assisted personal interview (CAPI) technology. In preparation for the development of the CATI/CAPI instrument, the team developed a comprehensive set of data elements from a thorough review of the data elements provided in the study solicitation, the data elements relationship to earlier administrations of NELS:88 and other elements of the education longitudinal study series, and the elements relevance to current research and policy issues. From the set of data elements, instrument developers structured the CATI/CAPI instrument by identifying section topics and determining the progression of items within sections. They then designed individual interview items with several goals in mind: (1) use prior NELS:88 items when feasible; (2) ensure consistency with prior NELS:88 items when items were not identical; and (3) identify and prepare wording for item verifications and probes, as necessary.

Despite different data collection methods, the CATI and CAPI interviews were programmed identically. The CATI/CAPI system software facilitated the preloading of full-screen data entry and editing of "matrix-type" responses. The system presented interviewers with screens of questions to ask respondents, with the software guiding the interviewer and respondent

through the interview. The program skipped inapplicable questions automatically, based on prior response patterns and preloaded information. It also suggested wording for probes when a respondent provided a response that was out of range for a given item and displayed special screens or other prompts when the interviewer entered inconsistent or incomplete information. Preloaded data from the earlier administrations of NELS:88 minimized the interview burden on respondents and dictated the flow of many portions of the instrument.

The NELS:88/2000 instrument comprised 10 sections: current activities, employment, job-related training, high school completion, postsecondary education, adult education, family formation, income and expenses, other outcomes, and race-ethnicity/residence. The content of these sections is described below.

Current activities. This section asked questions about the respondents' main activities at the time of the interview. These items provided the foundation for much of the remainder of the survey instrument, and the information was useful in identifying important subsets of the population. The section asked about sample members' current activity status (e.g., student, employee, homemaker, etc.) and, based on that status, collected information about unemployed sample members and current and former military service.

Employment. Capturing employment information for NELS participants who both did and did not enroll in postsecondary education is important to better understand the rate of economic return to individuals and society for various levels of education. The NELS employment items collected data on job title, duties, salary, hours worked per week, job satisfaction, and autonomy for currently held job for pay or most recent job if not currently working.

Job-related training. Consensus grew over the past decade on skills required for the work force. The new flexible work force will require workers who have formal educational training and who are continuously learning new skills and competencies, some of which may be validated with formal state or professional licensure and certification. To ensure accurate recall periods and to more closely target specific opportunities for training, this section asked about job-related training received in the last 6 months of the current (or most recent) job. Interviewers questioned members of the sample cohort who received such training, on the structure, purpose, and impact of their job-related training activities.

High school completion. A key milestone in a young person's life is completion of high school. By 1994, more than 87 percent of the NELS:88 cohort had earned a high school diploma or GED. The NELS:88/2000 interview updated high school completion information for those who had not completed high school by 1994 or who were not interviewed in 1994. Interviewers asked students who had obtained a GED their reasons for completing their high programs with the equivalency exam and whether they participated in a GED study program.

Postsecondary education. The postsecondary data items in the fourth follow-up of NELS, conducted 8 years after most NELS participants graduated from high school, provide important information for addressing issues of student access to postsecondary education, patterns of persistence within the system, and postsecondary educational attainment. This section collected the names, locations, and IPEDS codes[4] for all postsecondary institutions attended by

[4] NCES' Integrated Postsecondary Education Data System (IPEDS) surveys all primary providers of postsecondary education in the U.S. on enrollment, faculty, staff, and finances. Each postsecondary

sample members since high school graduation, degrees or certificates obtained, date of degree/certificate, and field of study. This section also collected information about postsecondary education experiences and aspirations.

Adult education. This section explored the ways in which respondents engage in learning beyond formal postsecondary education and job-related training. Young adults have a wide range of educational opportunities at their disposal from a variety of sources, and they engage in them for a variety of reasons. For example, sample members may take classes over the Internet, participate in continuing education courses at local schools and museums, and even obtain private tutors. In fact, creating lifelong learners is one of the important objectives of elementary and secondary education.

Family formation. The fourth follow-up of NELS is a rich resource of information regarding historical trends in family formation that are directly comparable to the HS&B and NLS-72 cohorts. This section collected data on current marital status, including the dates of marriage and how marriages ended (if applicable); household composition; number of dependents and children; and birth dates of the oldest and youngest children.

Income and Expenses. Considering the substantial earnings advantages of education, economic returns are one of the most important outcomes of education. This interview collected information about respondents' and their spouse's or partner's income in 1999, 1998, and 1997. This section also collected other measures of financial condition, such as current housing status and public assistance.

Other outcomes. This section collected information about community integration and healthy behaviors—factors that are commonly believed to be correlated with education and labor market outcomes. Questions focused on integration with and involvement in the community (e.g., volunteerism, voting behavior); questions about health-related issues included cigarette and alcohol use.

In addition to the CATI/CAPI interview just described, instrument developers created an abbreviated instrument expressly to conduct difficult-to-complete interviews with sample members. They developed this interview in two content-identical modes—hard copy and electronic versions—to collect data from sample members who either could not complete interviews by telephone (e.g., sample members without telephones or who were incarcerated) or would not complete telephone interviews (e.g., refusals). The abbreviated instrument focused on respondents' current activities, postsecondary education, and work experiences.

Base-Year through Second Follow-up School Administrator Questionnaires

The primary purpose of the school administrator questionnaire was to gather general descriptive information about the educational setting and environment associated with the individual students selected for participation in NELS:88. This school information describes the overall academic climate in terms of specific school practices and policies, as well as enrollments and educational offerings. The information obtained through the school administrator questionnaire provides supplemental data to the student questionnaire so that student outcomes can be considered in terms of school measures. Topics covered included:

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institution is assigned a unique unit identification number. In NELS:88, IPEDS codes are available only on the restricted use files.

- General school characteristics, such as grade span, school, and 12th grade enrollment sizes, and school control and demographic characteristics.

- General student characteristics for the modal grade of the survey cohort, including average daily attendance rates, ethnic and racial composition, percentage of students with limited English proficiency, and numbers of students receiving special school services.

- Teaching staff characteristics encompassing such areas as the number of full-time and part-time faculty, departmentalization of faculty, salary levels, and evaluation of teachers.

- School policies and programs, including requirements for minimum competency and proficiency tests, and programs for language minority students.

- School governance and climate, such as administration practices, school reforms, types of parental involvement, student behavioral problems in school, and areas of principal's control.

Base-Year through Second Follow-up Teacher Questionnaires

The NELS:88 teacher component was designed to provide teacher information that can be used to analyze the behaviors and outcomes of the student sample, including the effects of teaching on longitudinal student outcomes. The design of this component does not provide stand-alone analysis samples of teachers, but instead provides contextual data for analyses at the student level. The teacher questionnaire sought to illuminate questions of the quality, equality, and diversity of educational opportunity by obtaining information in the following four content areas:

- Teacher's assessment of the student's school-related behavior and academic performance, educational and career plans and goals. Respondents completed this section with respect to the sample members they instructed in a particular subject.

- Information about the class the teacher taught to the sample member (e.g., track assignments, instructional methods, homework assignments, and curricular contents). This section of the instrument included classroom topic coverage items ("opportunity to learn" items) that articulate with the cognitive tests.

- Information about the school social climate and organizational culture (e.g., teacher autonomy, participation in determining school policy, and relationships with the principal).

- Information about the teacher's background and activities (e.g., academic training, subject areas of instruction, years of teaching experience, and participation in professional growth activities).

Parent Questionnaires

Instrument developers designed the self-administered parent questionnaire to collect information from parents about factors that influence educational attainment and participation.

The objective of the parent questionnaire was to provide data that could be used primarily in the analysis of student behaviors and outcomes; it was designed only secondarily as a data set of parents. The questions focused on family background, socioeconomic characteristics, and the character of the home educational support system. In addition, the parent instrument collected data related to parental behaviors and circumstances with which the student may not have been familiar, such as parental education and occupation. It also contained more sensitive questions about income, postsecondary educational costs and financial aid decisions, and religious affiliation. In both the base year and the second follow-up, the parent questionnaire instructed the parent or guardian who was most knowledgeable about the sample member's educational activities and related behaviors to complete the questionnaire. Accordingly, the parent respondent was self-selected.

The parent questionnaire covered the following thematic areas:

- Information about the family's background (base year and second follow-up). In this section of the questionnaire, respondents identified their relationship with the student or dropout sample member, provided data on the family size and composition, and answered questions about their employment situation and occupation, race, and language background and skills.

- Information about the teenager's school life (base year and second follow-up). This section elicited parental knowledge of key characteristics of the teenager's educational situation and collected data on the forms of interaction between the school and parent.

- The teenager's family life (base year and second follow-up). This section of the questionnaire asked parents about the decision-making process within the household and the kinds of interaction between the respondent and teenager. It included several sensitive questions about community life and drug and alcohol use by the teenager.

- Opinions about the teenager's school (base year only).

- The teenager's postsecondary plans (second follow-up only). This section covered parental aspirations for the teenager, preparations for postsecondary education, and plans for the teenager's transition to the work force.

- The teenager's plans for the future (second follow-up only). This section covered parental educational aspirations for the teenager.

- Financial information and educational costs. This section included items about family income and financial preparations for the teenager's postsecondary education.

- Supplemental questions for parents new to NELS:88 in the second follow-up (second follow-up only). These items were administered to parents who had not participated in the base-year parent survey either because the parent or guardian was a base-year nonrespondent or because the student was added to the sample in the first or second follow-up. Items covered 1988 family characteristics, size, and composition, parent education, and parent age.

Transcript Studies

Second Follow-up Transcript Component

In the second follow-up, the research team collected high school transcripts for members of the contextual sample (students for whom contextual school and teacher data were collected), all eligible sample members who were dropouts (including GED recipients) or early graduates, and sample members who were in the 12th grade in 1992 and ineligible for all three waves of NELS:88. Collecting the high school transcripts facilitated two important research efforts:

- the validation of certain data—including high school course taking, course grades, and attendance data provided by sample members in their responses to the first follow-up and second follow-up questionnaires; and,

- the investigation of course-taking patterns by sample member characteristics, and the relationship of such patterns to sample members' postsecondary activities and achievement.

In reviewing the transcripts, the following data elements were abstracted:

- Student-level items, including number of absences per year, rank in class and class size, date student left school, reason student left school (graduated, transferred, etc.), cumulative GPA, and standardized scores for the PSAT, SAT, ACT, College Board Achievement tests, and Advanced Placement tests.

- Course-level items (for courses taken in grades 9 through 12), including course title, department, and number; year, grade level, and term course taken; number of credits earned; and grade awarded.

Fourth Follow-up Postsecondary Education Transcript Study

A postsecondary education transcript study was conducted after the fourth follow-up telephone survey in 2000, to add richness and depth to the academic data collected during the third and fourth follow-up studies. The study primarily sought to gather data on course-taking behavior and postsecondary achievement. All fourth follow-up respondents who reported any postsecondary education were included in the transcript collection study.

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